REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

In the specification, paragraphs [0003], [0036], and [0037] have been amended.

Claims 2, 3, 5, 6, 7, 8, 11, 12, 13, 14, 17, 18, and 21 are amended. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier. After amending the claim as set forth above, claims 1-22 are now pending in this application.

Rejections Under 35 U.S.C. § 102

Claim 21

Claim 21 is rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,369,378 (Kosaka 1). Applicant respectfully traverses the rejection. Kosaka 1 fails to disclose, suggest, or teach Applicant's claimed invention as recited in Claim 21, as amended. Claim 21 recites:

> A method of modulation using differential quadrature phase shift keying (DQPSK), the method comprising:
>
> obtaining two communication bits indicative of the outbound communication signal;
>
> translating the two communication bits to three communication bits; and

mapping the translated bits to DQPSK symbols, wherein each DQPSK symbol is represented by a single in-phase component and a single quadrature phase component.

Kosaka 1 discloses obtaining two communication bits YK and XK (Col. 6, lines 51-52) and using the two communication bits and the preceding symbol to translate the two communication bits into a 3-bit output SM0, SM1 and SM2 (See Col. 6, lines 58-61; Figure 8; Col. 6, line 47; Figure 8; Col. 8, line 68, Col. 7, lines 1-11; Figure 9). The translation technique described in Kosaka 1 maps the 3-bit output SM0, SM1 and SM2 to symbol mapping data I0, I1, Q0 and Q1. The Kosaka 1 process maps to 2-bits for the I phase (I0 and I1) and 2-bits for the Q phase (Q0 and Q1). (See Col. 7, lines 52-68; Col. 8, lines 1-3.) Kosaka 1 does not teach or suggest mapping the translated bits to DQPSK symbols **where each DQPSK symbol is represented by a single in-phase component and a single quadrature phase component**, as required by amended Claim 21.

For at least the foregoing reasons, Kosaka 1 fails to disclose, suggest, or teach Applicant's claimed invention as recited in Claim 21. Accordingly, the rejection of Claim 21 based on 35 U.S.C. § 102(b) cannot be properly maintained. Applicant respectfully requests withdrawal of the rejection of Claim 21.

Claim 22

Claim 22 is rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,355,092 (Kosaka 2). Applicant respectfully traverses the rejection. Kosaka 2 fails to disclose, suggest, or teach the Applicant's claimed invention as recited in Claim 22.

Claim 22 recites:

> A method of demodulation using differential quadrature phase shift keying (DQPSK), the method comprising:
>
> obtaining Pi/4 differential quadrature phase shift keying (DQPSK) symbols;
>
> translating the Pi/4 DQPSK symbols into quadrature phase shift keying (QPSK) symbols; and
>
> mapping the QPSK symbols to a pair of bits.

Kosaka 2 fails to disclose or suggest "obtaining Pi/4 demodulation quadrature phase shift keying (DQPSK) symbols," recited in Claim 22. Kosaka 2 also fails to disclose or suggest "translating the Pi/4 DQPSK symbols into quadrature phase shift keying (QPSK) symbols," recited in Claim 22.

The Examiner erroneously asserts that Kosaka 2 discloses a **demodulation** technique and that the technique discloses Applicant's claimed invention as recited in Claim 22. The Examiner points to Col. 2, lines 48-68 and Figure 4 and Col. 15, lines 58-68, Col. 16, lines 1-10 and Figures 6 and 22 to make this argument. The cited text in Kosaka 2 discloses a **modulation, not a demodulation** technique referred to as "Pi/4 shift DQPSK modulation" and also as "QPSK modulation using the differential encoding method." There is no discussion of a demodulation method which includes **obtaining Pi/4 DQPSK symbols and translating them into Quadrature phase shift keying (QPSK) symbols**, as required by Claim 22.

For at least the foregoing reasons, Kosaka 2 fails to disclose, suggest, or teach Applicant's claimed invention as recited in Claim 22. Accordingly, the rejection of Claim 22

based on 35 U.S.C. § 102(b) cannot be properly maintained. Applicant respectfully requests withdrawal of the rejection of Claim 22.

Rejections Under 35 U.S.C. § 103

Claims 1, 2, 5, 6, 7, 8, 9, 10, 11, 12, 14, 15, 16, 17 and 20

Claims 1, 2, 5, 6, 7, 8, 9, 10, 11, 12, 14, 15, 16, 17 and 20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kosaka 2 in view of Kosaka 1. Applicant respectfully traverses the rejection. Kosaka 2 and Kosaka 1 fail to combine to disclose, teach, or suggest Applicant's claimed invention as recited in Claims 1, 2, 5, 6, 7, 8, 9, 10, 11, 12, 14, 15, 16, 17 and 20.

The Examiner appears to argue that the demodulation aspect of the rejected claims 1, 10 and 15, coupled with the modulation aspect of the rejected claims 1, 10 and 15 are covered by combining Kosaka 2 with Kosaka 1, respectively. The Examiner points to Col. 2, lines 48-68 and Figure 4 of Kosaka 2 as teaching obtaining Pi/4 DQPSK symbols and translating them into Quadrature phase shift keying (QPSK) symbols. However, this section of Kosaka 2 and Figure 4 teach a Pi/4 QPSK modulation technique that uses differential encoding, or Pi/4 DQPSK modulation. This is different than "obtaining Pi/4 differential quadrature phase shift keying (DQPSK) symbols" and "translating the Pi/4 DQPSK symbols into quadrature phase shift keying (QPSK) symbols" recited in Claim 1 because these operations are performed during **demodulation** of the communication signal. The cited section of Kosaka 2 teaches a **modulation** technique, namely Pi/4 DQPSK modulation. Therefore, the cited section of Kosaka

2, which is directed to modulation, does not disclose the operations that take place during the demodulation process recited in Claim 1.

Accordingly, Kosaka 2 does not disclose, suggest or teach "obtaining Pi/4 demodulation quadrature phase shift keying (DQPSK) symbols" recited in Claim 1, nor does it disclose or teach "translating the Pi/4 DQPSK symbols into quadrature phase shift keying (QPSK) symbols" recited in Claim 1. For these same reasons, Kosaka 2 does not disclose, suggest or teach:

> a storage device ... having ... information for configuring the processing unit to:
>
> obtain Pi/4 differential quadrature phase shift keying (DQPSK) symbols;
>
> translate the Pi/4 DQPSK symbols into quadrature phase shift keying (QPSK) symbols

recited in Claim 10; nor does it disclose, suggest or teach:

> means for obtaining Pi/4 differential quadrature phase shift keying (DQPSK) symbols;
>
> translating the Pi/4 DQPSK symbols into quadrature phase shift keying (QPSK) symbols

recited in Claim 15.

Accordingly, Kosaka 2 in combination with Kosaka 1 does not disclose, suggest or teach all of the claim elements of Claims 1, 10 and 15. Therefore, Kosaka 2 and Kosaka 1, even if combined, do not disclose, suggest or teach Applicant's claimed invention as recited in Claims 1, 10 and 15. Claims 2, 5, 6, 7, 8, 9, 11, 12, 14, 16, 17, and 20 depend from Claims 1, 10, and 15 and are patentable for at least the same reasons.

Claims 3, 4, 13, 18 and 19

Claims 3, 4, 13, 18 and 19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kosaka 2, in view of Kosaka 1 and further in view of U.S. Patent No. 5,313,493 (hereinafter referred to as "Dutta"). Applicant respectfully traverses the rejection. Kosaka 2, Kosaka 1, and Dutta fail to combine to disclose, teach, or suggest Applicant's claimed invention as recited in Claims 3, 4, 13, 18 and 19.

Claims 3, 4, 13, 18, and 19 depend from Claims 1, 10, and 15 and are patentable for at least the same reasons. These dependent claims are patentable for additional reasons. For example, Kosaka 2 teaches that "in order to demodulate the [Pi/4] ... shift QPSK modulated signal ... [according to the equation referred to by the Examiner], at each maximum effect point, the phase ... at the symbol and the phase ... at an immediately preceding symbol **are detected**." (Col. 3, lines 47-52, emphasis added.) Therefore, the approach taught in Kosaka 2 functions according to a manner which is contrary to the approach recited in claims 4 and 19. That is, Kosaka 2 requires phases for the symbol and its predecessor symbol to be known. Claims 4 and 19 recite "a phase of a first symbol is not known and a phase of a predecessor symbol is known." Accordingly, Applicant respectfully requests withdrawal of the rejection.

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. **19-2179**. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. **19-2179.**

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Amendments to the Drawings:

The drawing sheets attached in connection with the above-identified application containing Figure 5 and Figure 1 are being presented as new formal drawing sheets to be substituted for the previously submitted drawing sheets.

The Examiner objected to Figure 5 indicating that the output of the XOR gate should be Y'. Applicant has amended Figure 5 to indicate the output of the XOR gate as Y'.

The Examiner objected to paragraph 3 starting at line 17 on page 7 because of the use of the language "a network". With reference to FIGURE 1, the Examiner asserted that the phrase should be "a wireless network." Applicant respectfully asserts that the application teaches a method of and system for modulating and demodulating a communication signal using differential quadrature phase shift keying (DQPSK) which can be employed in a wireless or wired network. Therefore, Applicant respectfully submits a modification to Figure 1 to the language "NETWORK" instead of "WIRELESS NETWORK."